ENGINEERING SOLUTIONS TO
EDUCATION'S TOUGHEST PROBLEMS.

#CHALLENGE ACCEPTED

MCESA
Maricopa County Education Service Agency

@ MCESA
We believe in our educators.

We understand problems and solutions are best identified by the people currently doing the work. Educators have the ideas to solve them. They always have.

MCESA is bringing the educators back into the conversation.

We support educators to clearly understand and articulate the challenges we face. We then work together to create solutions to education's —and our community's—toughest challenges.

Educators hold the key to these challenges.

As a government education organization, MCESA **makes time and space for educators** to understand challenges, to unlock the solutions, and create successful systems for the benefit of all students… no exceptions!

RE-ENGINEERING EDUCATION SYSTEMS TAKES PASSION, COMMITMENT, AND EXPERIENCE.

MCESA HAS THAT PASSION, COMMITMENT, AND EXPERIENCE.

WHO WE ARE

150 PROFESSIONALS THAT SHARE A PASSION FOR TEACHING, LEADING AND LEARNING.

WE ARE Teachers, Principals, Curriculum Experts, Special Education Experts, Professional Development Experts, Assessment Experts, Human Capital Management Experts, Finance And Business Experts, Information Technology Experts, Legislative Experts, Governing Board Experts, Homeschool And Private School Experts, Research And Evaluation Experts, Juvenile Justice Experts, Citizens, Parents, Grandparents

Your local partner, working for your success!

HOW WE DO OUR WORK

WE WORK WITH OUR PARTNERS TO FIND SOLUTIONS TO SOME OF EDUCATION'S TOUGHEST CHALLENGES.

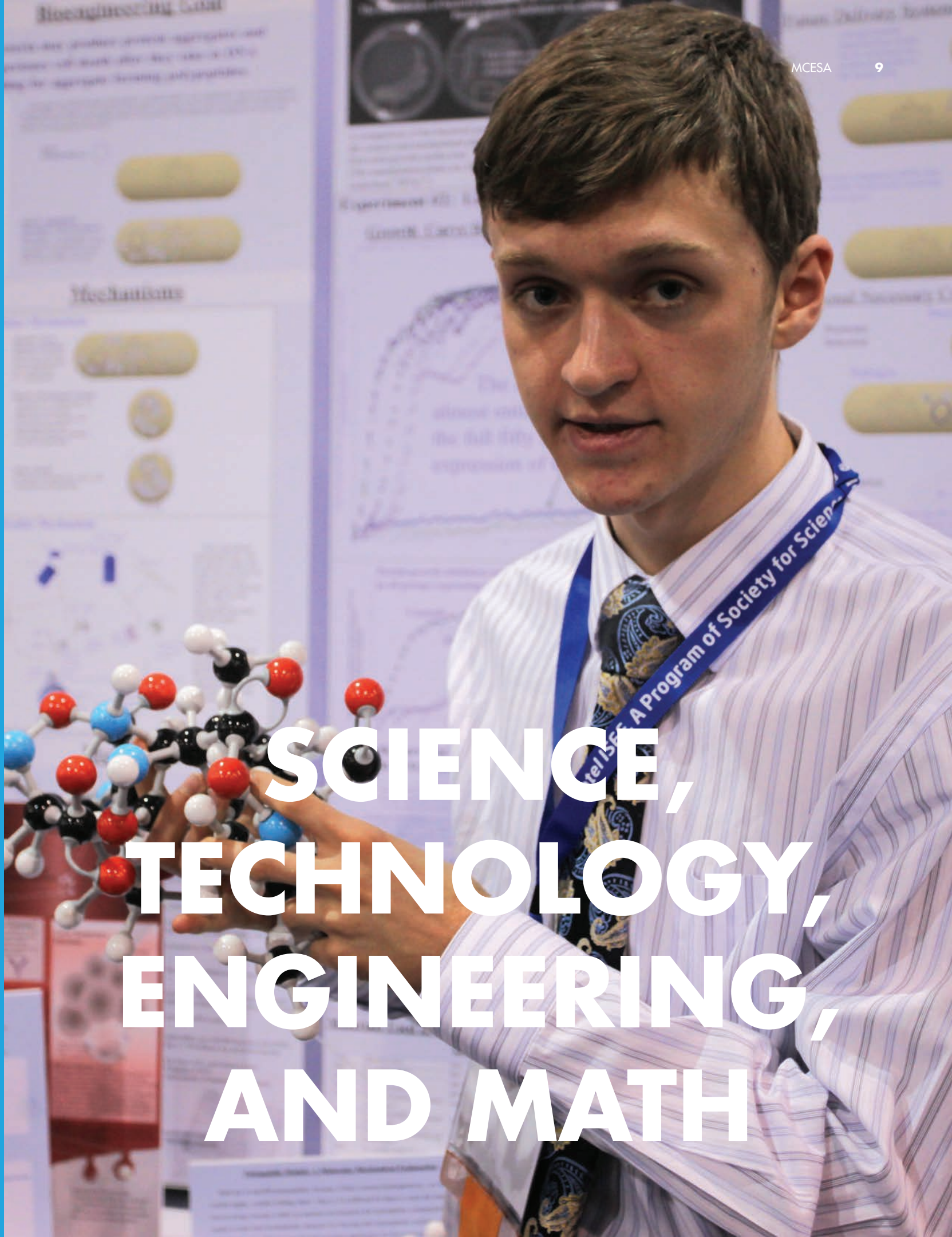
CHALLENGE

Too few students are persisting in STEM courses

Our partners identified that current systems are not preparing enough students—especially girls, high-poverty and minority students—for innovative, high-paying science, technology, engineering and mathematics jobs.

PROCESS

Developing students' STEM identity



SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH

"The Engineering STEM Identity program really has the power to not only change students' attitudes towards STEM, but their perception of themselves as well."

–Olga Epshtein, ARCADIS

SOLUTION

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH

WHAT WE KNOW Students that are able to see themselves as STEM professionals in middle school are more likely to take relevant coursework and pursue a career in STEM later.[1]

Engineering STEM Identity was created to develop STEM identities in students that otherwise might not have that opportunity. We empower school systems to tackle this challenge by supporting **students, developing teachers, and empowering school leaders.**

Supporting Students
Students will experience four research-based aspects of Engineering:

1. Engage in meaningful STEM challenges across districts via video conferencing.
2. Learn math and science content through the research-based Modeling Curriculum.
3. Access STEM professionals, trained as a role model, for mentoring and content support.
4. Recognize peer success and be recognized by connecting with students via video conferencing to share accomplishments and receive feedback, an activity called "peer panels."

Developing Teachers
Teachers increase their math and science content knowledge and pedagogy through hands-on workshops and coaching.

Empowering School Leaders
Leader cohorts are established to empower administers to become agents for change.

2014-15 School Year

2,000 STUDENTS
IN THE PILOT PROGRAM

120 HOURS
OF TEACHER PROFESSIONAL DEVELOPMENT

Development Partners: Freeport McMoRan, Intel, Arizona Science Center, U.S. Department of Education, Arizona STEM Network, Learning Mate, Helios, AZ Community Foundation, Aguila Elementary, Arlington Elementary, Balsz Elementary, Mobile Elementary, Morristown Elementary, Paloma Elementary, Saddle Mountain Unified, Salt River Pima, Tolleson Elementary

[1] Archer et al., 2012

SPOTLIGHT ON…

Interactive Video Learning

Providing access to high quality STEM instruction regardless of zip code.

Thousands of students in the far corners of Maricopa County are being supported by "top tier" STEM instructors and professionals through MCESA's interactive video learning (IVL) program.

Highly effective math and science teachers are hard to come by but desperately needed to train the technical workforce of tomorrow. STEM industry professionals are crucial in the development of a student's STEM identity but are often located in urban areas. Interactive video technology breaks down the barriers of distance and scarcity and puts the best educators and professionals in front of students regardless of their location and socioeconomic situation.

Results indicate that the program is successfully providing students with innovative instruction and experiences that were historically out of reach due to geographic limitations.

Classrooms are also able to use MCESA's IVL to connect with other classrooms across the county to discuss the STEM challenges they are working on and how they are working through the scientific process to overcome those STEM challenges.

Jeff Hengesbach, a STEM coach at MCESA, explained that using interactive video technology to connect classrooms is especially advantageous to those smaller, rural classes that may only have a few students. This gives them the opportunity to share and discuss with other students in an academic, science setting.

"The scientific community is not about isolation, but about sharing," Hengesbach said. Interactive video learning makes that sharing and learning possible.

ESI Districts

- *Aguila*
- *Arlington*
- *Balsz*
- *Mobile*
- *Morristown*
- *Nadaburg*
- *Paloma*
- *Saddle Mountain*
- *Salt River*
- *Tolleson*

Interactive video technology breaks down the barriers of distance and scarcity.

CHALLENGE

Students must be academically prepared to compete in a global economy

Our partners have reported that significant increases in student learning are inconsistent between schools and school systems—especially in economically disadvantaged areas.

PROCESS

Working with leaders to ensure effective standards implementation

education.maricopa.gov/standards

ACADEMIC STANDARDS

"MCESA has been very instrumental in helping us provide ongoing quality professional development for our staff. We sit and discuss how we can customize the existing professional development menu to support our school needs based on student work, achievement data and teacher need and request."

–Loraine Conley,
Dunbar Elementary

SOLUTION

ACADEMIC STANDARDS

WHAT WE KNOW Increasing the effectiveness of professional learning is the leverage point with the greatest potential for strengthening and refining the day-to-day performance of educators.[2]

Standards professional learning courses and services were developed to support the statewide implementation of Arizona's standards. Our approach focuses on phases two and three of implementation, which **emphasize assessment, integration, and leadership development.**

We have created a flexible structure that supports school systems with creating a **strategic and personalized professional learning plan.**

Together We Use Data To
- Examine data from multiple sources.
- Analyze underlying factors.
- Draw conclusions about the strengths and needs of the organization.

Together We Determine
- Needed pedagogy and materials.
- Needed content.
- Needed professional development.
- Support to develop teacher leaders.

Together We Develop A Plan of Support
- Focused on the development of the school leader.
- Aligned to the school's strategic plan.
- Implemented with ongoing coaching.

2014-15 School Year

2,694 TEACHERS
TRAINED IN MATH & ELA STANDARDS

41 LEADERS
TRAINED IN MATH & ELA STANDARDS LEADERSHIP

Development Partners: Expect More Arizona, Arizona Department of Education, Arlington Elementary, Success School District, Arizona Charter Academy, Blueprint Alternative Education, Higley Unified School District, Madison Elementary, Maricopa County Regional, Palo Verde Elementary, Saddle Mountain Unified, Salt River Pima Indian Community, Wickenburg Unified

[2] Learning Forward Standards for Professional Learning

SPOTLIGHT ON…

MATH 20/20: A New Lens for Teaching and Learning

Equal access to quality mathematics instruction for all students.

Math 20/20 transforms the way Arizona's mathematics standards are supported in a school. This approach changes the mathematics culture on a campus by providing teachers, teacher leaders, and administrators **a conceptual understanding** of the mathematics students are expected to learn.

Math 20/20 provides teachers across a district with **research-based pedagogy and the foundational understanding of mathematics they need** to be able to effectively teach math for today's students. Providing instruction for all teachers in a grade across an entire district means a district can offer **consistent quality throughout.**

"All of the math that you grew up with, all the math facts practice and learning to do long division and all the procedural things are still there," said Candace Diehl, MCESA administrator of curriculum and assessments. **"But what's also there is student understanding of what they're actually doing."**

Development Partners: Rodel Foundation

CHALLENGE

Educators struggle to access useful data

Our partners have stated that the data teachers and education leaders need to make decisions is either not readily available or scattered across multiple locations.

PROCESS

Linking educator effectiveness to customized resources

education.maricopa.gov/data

INSTRUCTIONAL IMPROVEMENT DATA

"The data system is changing the way evaluations are supporting educators, the way effectiveness is measured, and the way compensation is determined."

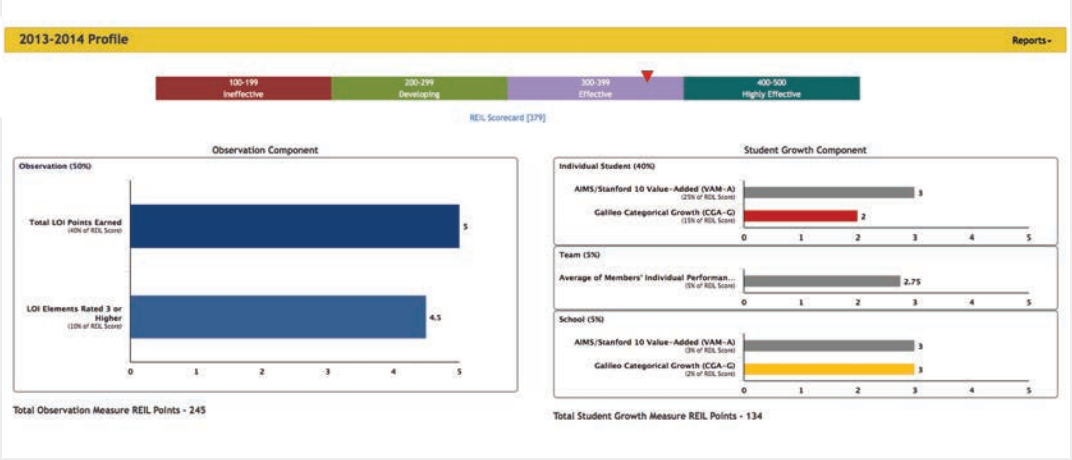
–Laurie King,
MCESA's Director of Learning and Communication Systems

SOLUTION

INSTRUCTIONAL IMPROVEMENT DA

WHAT WE KNOW The fragmented nature of data systems leave many districts struggling to provide meaningful, real-time data about student performance to educators.[3]

MCESA's revolutionary data system collects student learning data and educator effectiveness data. Then, the data system matches it to online learning resources, empowering educators to take immediate action toward instructional improvement.



Educator Profile
Displaying educator effectiveness dashboards and recommending differentiated support

Student Learning Data
Delivering valid and reliable student assessments in traditionally non-tested areas

Educator Observation Data
Collecting and displaying educator observation data

Professional Learning Resources
Connecting educators to resources aligned to their individual needs—includes courses and classroom videos

173 DIFFERENTIATED EDUCATOR PROFILES

6 STUDENT GROWTH DATA SOURCES

255 DIFFERENTIATED PROFESSIONAL LEARNING RESOURCES

Development Partners: Basis Policy Research, U.S. Department of Education, Arizona Department of Education, Alhambra Elementary District, Gila Bend Unified District, Isaac Elementary District, Nadaburg Unified District, Tolleson Elementary District, Balsz Elementary District, Arizona Juvenile Corrections, Maricopa County Regional District, Mobile Elementary District, Phoenix Elementary District, Roosevelt Elementary District, Wilson Elementary District

[3] Technology Counts, 2013

SPOTLIGHT ON…

The MCESA Video Bank

Illustrating effective classroom instruction at every level.

MCESA'S Video Bank houses video clips of local educators doing what they do best.

The Video Bank showcases classroom and leadership practices from multiple content areas, grade bands, and leadership settings. The videos **assist educators in accessing just-in-time information** aligned with the results of their observation feedback as well as Educator Goal Plans.

The Learning Observation Video Bank houses more than **200 videos depicting effective classroom instruction** broken down by instructional element and aligned to the observation rubric.

"The video bank has really helped me prepare for my observations. After watching a clip, it is amazing how it just makes more sense."

–Esperanza Lopez, Teacher

Development Partners: U.S. Department of Education, Alhambra Elementary, Gila Bend Unified, Nadaburg Unified, Tolleson Elementary, Balsz Elementary, AZ Juvenile Corrections, Maricopa County Regional, Mobile Elementary, Phoenix Elementary, Roosevelt Elementary, Wilson Elementary

CHALLENGE

A critical demand for great educators

Our partners have reported they struggle to recruit, support, and retain top talent.

PROCESS

Personalizing support and opportunities to recruit and retain top talent

EDUCATOR EFFECTIVENESS

"Our work with MCESA has changed practice for the teachers, and it has changed the conversation for the teachers."

–Lupita Hightower, Ed.D., Superintendent, Tolleson Elementary School District

SOLUTION

EDUCATOR EFFECTIVENESS

WHAT WE KNOW Nothing is more important to the success of a school system than the quality of its teachers and leaders. Increasing expectations and a lack of support and career pathways are causing educators to leave the profession at alarming rates and creating challenges for hiring top tier talent. Arizona ranks 42nd in the nation for average teacher salary. Forty-six percent of new teachers leave the profession within their first five years. More than 700 classroom openings were reported in Arizona in 2014.[4]

MCESA utilizes **four pillars of support** to raise educator quality and recognize excellence. The four pillars outline **proven strategies for developing talent, enhancing careers, and improving student learning.**

Rigorous, Fair, And Transparent Educator Evaluations

Evaluator certification through inter-rater agreement training on observation instruments.

Specific feedback on performance for educators.

Clear picture of "highly effective" educators.

Differentiated Performance-Based Compensation

Implementation of multiple measures for educator evaluation.

Differential compensation/market incentives for highly effective educators.

Educator improvement and rewarded excellence.

Educator Career Pathways

Multiple career pathways established and implemented.

Advancement opportunities for educators.

The "best and brightest" teach in high-need schools.

Targeted Professional Development

Individualized Educator Goal Plans developed based on evaluation process.

Job-embedded professional development for educators.

Support for educators to be successful.

Development Partners: U.S. Department of Education, Arizona Department of Education, Arizona Education Association, Arizona School Board Association, Arizona School Administrators Association, Alhambra Elementary, Gila Bend Unified, Nadaburg Unified, Tolleson Elementary, Balsz Elementary, Arizona Department of Juvenile Corrections, Maricopa County Regional, Mobile Elementary, Phoenix Elementary, Roosevelt Elementary, Wilson Elementary

[4] Arizona Department of Education, Educator Recruitment and Retention Task Force Report

SPOTLIGHT ON…

Peer Evaluators

The very best in job-embedded professional development.

Fair and transparent teacher evaluation systems need the highest quality evaluators—experts in both pedagogy and the content they are observing.

MCESA's highly trained Peer Evaluators not only conduct a fair and transparent observation cycle, but provide valuable professional development services. Peer Evaluators are invested in the success of the teachers they observe. They make sure teachers have the resources and knowledge they need and continually help develop the skills needed for the best possible evaluation.

After all, **when our teachers succeed, our students succeed!**

"I am so so so grateful for all of your knowledge. This year has been the most beneficial with a peer evaluator. They should make you staff of the year for all that you do. You go above and beyond, and you don't stop until you feel that I am comfortable and understand. Thanks again for such a fantastic observation cycle experience."

–Amanda Anderson,
Tolleson Elementary School District

Peer Evaluator candidates undergo a rigorous hiring process to ensure they have the highest level of knowledge and skill, and the right disposition. They must pass the annual certified evaluator instrument. They are observed and also receive feedback! Eighty percent of their time is used to conduct observation cycles. The rest is spent designing professional development. Whenever possible, Peer Evaluators are matched with teachers based on content expertise and/or experience.

2014-15 School Year

705 TEACHERS SERVED

2,790 OBSERVATION CYCLES IN 2014-2015

130 HOURS OF PROFESSIONAL DEVELOPMENT PEER EVALUATORS RECEIVED

Development Partners: U.S. Department of Education, Alhambra Elementary, Gila Bend Unified, Nadaburg Unified, Tolleson Elementary, Balsz Elementary, AZ Juvenile Corrections, Maricopa County Regional, Mobile Elementary, Phoenix Elementary, Roosevelt Elementary, Wilson Elementary

CHALLENGE

Too many youth leave school and find it difficult to return

Our partners are concerned about the future of opportunity youth, individuals ages 16 to 24 not in school or working, and how they can negatively affect the strength of communities and the state's economic health.

PROCESS

Connecting people, leveraging resources, and creating a system to change these youths' futures

OPPORTUNITIES FOR YOUTH

"They are not somebody else's problem. They are not somebody else's issue. They are all of our issue… It's all of our issue to roll up our sleeves and be responsive to it."

–Phoenix Mayor Greg Stanton

SOLUTION

OPPORTUNITIES FOR YOUTH

WHAT WE KNOW School is easy to leave and difficult to re-enter. In 2012, 18.8 percent of the Phoenix metro area's young adults ages 16 to 24 were not in school or in a job.[5] That number placed Phoenix at the top of the list of the 25 largest U.S. metro areas for having the highest number of these "disconnected youth." Each disconnected youth accounts for $695,0900 in lifetime economic losses. Arizona's 183,200 disconnected youth in 2012 account for an aggregate loss of $127.3 billion to the state.[6]

Youth become disconnected for a variety of reasons, including growing up in communities with little emphasis on earning a diploma, not being able to balance parenting children and going to school or work, and not finding work due to the economic recession. Because youth become disconnected for an assortment of reasons, any solution must include a combination of responses for these youth.

Maricopa County Education Service Agency **has brought together hundreds of caring individuals, youth-serving agencies, and city government officials.** Together, MCESA and partners developed a comprehensive plan to re-engage disconnected youth in Maricopa County. That plan includes four pathways to re-engagement:

- Re-Engagement Centers
- Educational Momentum
- Career Connections
- Positive Youth Development

Development Partners: Valley of the Sun United Way, Measure of America, Foundation Strategy Group (FSG), Big Picture Learning, Social Venture Partners City of Phoenix, Arizona Charter Association, Kids at Hope, Arizona Business and Education Coalition, Arizona Call-A-Teen Youth Resources, Arizona Department of Education, Arizona School Administrators, Arizona Supreme Court: Adult Probation, Boys & Girls Club of Metro Phoenix, Children's Action Alliance, City of Phoenix, Corporate Education Consulting, Eight, Arizona PBS-Education Outreach, Google, Governor's Office for Children Youth and Family, Greater Phoenix Urban League, Jobs for Arizona's Graduates, various Maricopa County offices, Maricopa County's National Association for the Advancement of Colored People, Phoenix Union High School District, ASU Lodestar Center for Philanthropy and Nonprofit Innovation, Social Venture Partners, South Mountain Community College, The National Tri-Caucus Board Development Association, Trin and Associates, Trinity Opportunity Alliance, Tumbleweed Center for Youth Development

[5] According to Measure of America
[6] According to "The Economic Losses from High School Dropouts and Disconnected Youth: Evidence from Across Arizona" by Clive R. Belfield for the Arizona Mayors Education Roundtable

SPOTLIGHT ON…

Opportunities for Youth Backbone Support

Using The Collective Impact Model.

To solve the issue of youth disconnection in our county, youth-serving agencies, the philanthropic sector, education institutions, and government organizations must come together using a Collective Impact Model to leverage resources, align visions, and hold one another accountable for goals and measurements. The Collective Impact Model is built on the idea that so many social change efforts are program-rich, but system poor.

MCESA helped develop the Opportunities for Youth board of directors that is guiding the vision and implementation of this plan. The board named MCESA and The National Tri-Caucus Board Development Association to be the backbone support for the initiative based on their unique abilities to serve as neutral conveners and mobilize the community. As the backbone support, MCESA and Tri-Caucus are organizing people and information to take collective action and are now fulfilling six essential functions:

1. Providing overall strategic direction
2. Facilitating collaboration between partners
3. Managing data collection and analysis
4. Handling communications
5. Advancing policy
6. Mobilizing funding

Opportunities for Youth Board of Directors Goal:

By 2020, achieve an 11% opportunity youth rate in Maricopa County.

MCESA is proud to support efforts that help the community create a system that provides opportunities for all youth in Maricopa County.

Development Partners: American Graduate/Arizona PBS, Eight, Intel, Arizona STEM Network, STEM commissions

CHALLENGE

Not all schools are technologically future ready

Our partners share how difficult it is to acquire, install, and maintain an infrastructure that supports teachers and students with 21st Century learning expectations.

PROCESS

Help schools plan, implement, and maintain a robust technology infrastructure for educators and students

education.maricopa.gov/technology
education.maricopa.gov/stem

FUTURE READY

"We want our teachers spending time utilizing technology to help kids. We don't want them spending time managing technology or trying to figure it out."

–Jeff Abbott,
MCESA IT Director

SOLUTION

WHAT WE KNOW "Technology now allows for personalized digital learning for every student in the nation so long as leaders have the technological infrastructure and human capacity in place to ensure success."[7] However, less than 30 percent of schools have the bandwidth they need to teach using today's technology.[8] Lack of access to technology is one of the biggest factors in economic inequity in the United States.[9] Technology access across Maricopa County is inconsistent and students are missing out on becoming future ready.

The MCESA technology team's accomplishments were recognized in 2013 with the prestigious international Computerworld Honors Laureate for its innovative use of educational technology. The award acknowledged the extensive array of technology services that keep MCESA's internal organization online and aid school districts. Services provided include, but are not limited to the following:

- Strategic IT planning and development
- Enterprise application support
- Device support services
- Interactive video learning
- Assessment delivery on tablets

[7] U.S. Department of Education Office of Educational Technology
[8] U.S. Department of Education Office of Educational Technology
[9] http://www.technologyreview.com/featuredstory/531726/technology-and-inequality/

SPOTLIGHT ON…

STEM Pro Live!

Connecting STEM professionals to all students… everywhere!

Each month, MCESA broadcasts a STEM professional from his or her innovative workplace to classrooms nationwide.

They tell personal stories about what inspired them to get into the field, what courses they took in school, and what is so amazing about their work. They show off their workplace, explain the work they do, and talk about the affect their work has on making the world better.

Almost half of the STEM Pro Live! broadcast focuses on a live question-and-answer time. Students and teachers submit their questions through an online chat room for the STEM professionals to answer during the live broadcast.

Not only do classrooms have the opportunity to ask any questions of the STEM professionals, but **MCESA creates and provides anticipatory sets, follow-up discussion topics, and additional resources** to help classrooms gain even more from interacting with these STEM professionals.

STEM Pro Live! is broadcast across the United States and has already **reached more than 200 classrooms with 6,000 students,** most from right here in Maricopa County.

"Wow—What a rich learning opportunity MCESA provided today! That was STEM education at its finest!"

–Lisa Herrmann, Teacher

STEM Pro Live! broadcasts have included professionals from Intel, PCL Construction, U.S. Airways Center, Axosoft, SAP, Local Motors, Freeport McMoRan, APS, Butterfly Wonderland and multiple other companies.

Development Partners: American Graduate/Arizona PBS, Eight, Intel, Arizona STEM Network, STEM commissions

CHALLENGE

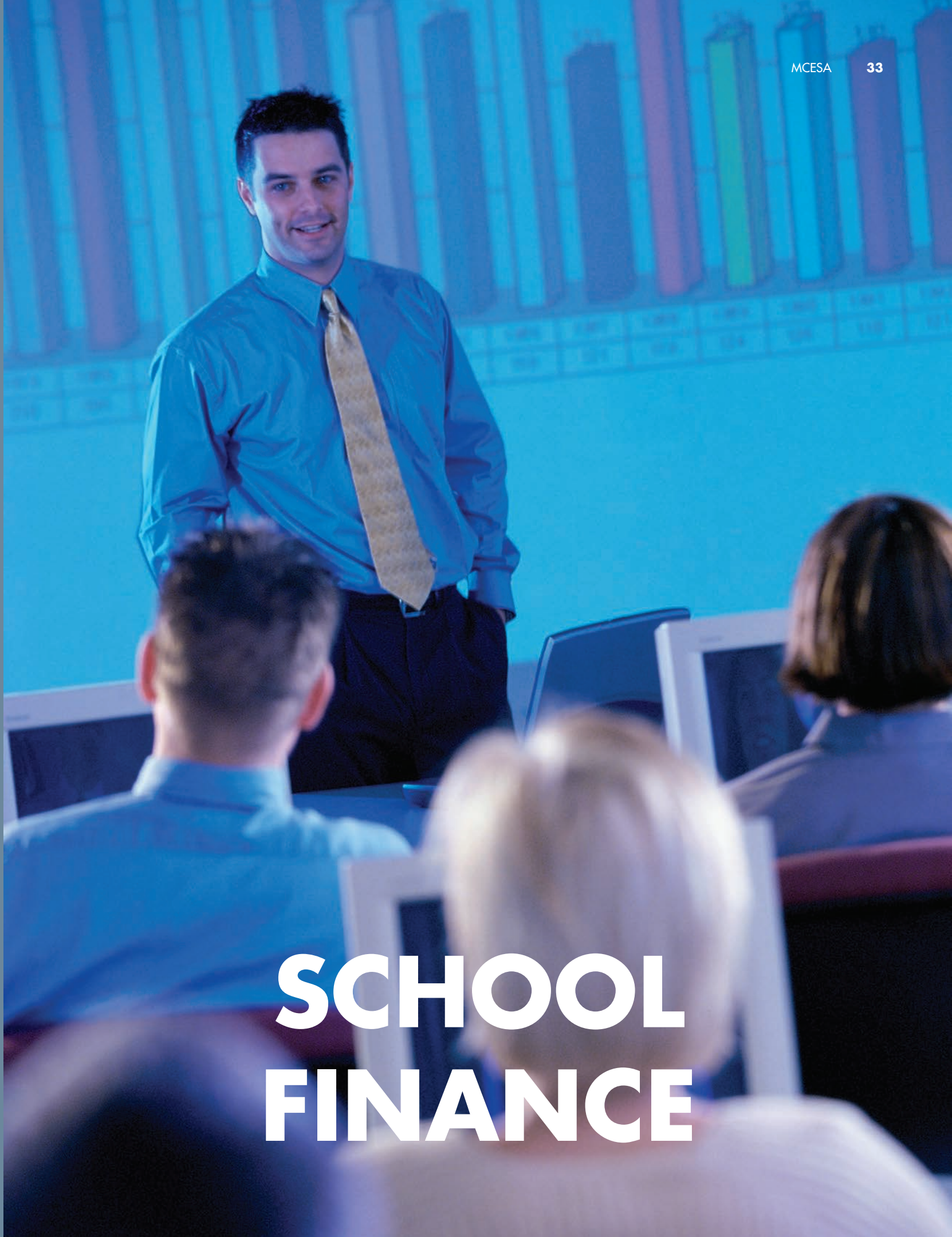
Budgets shrink as expectations increase

Our local partner schools are feeling the stress and pressure from continual cuts to state funding and the expectation to do more with less.

PROCESS

Providing a team of school finance experts that leverage resources and offer support for the complexity of fiscal management

education.maricopa.gov/finance
education.maricopa.gov/credit



SCHOOL FINANCE

"Every school district is different and needs a different level of support. MCESA has the experts on staff that can support any of the needs our district finance teams require from accounting, financing, bonding, reporting or just overall fiscal management to increase dollars in the classroom and reduce audit findings."

–Marc Kuffner,
Assistant Superintendent of Economic Management and Consulting

SOLUTION

SCHOOL FINANCE

WHAT WE KNOW Arizona currently has the second lowest average per pupil expenditure in the country.[10] School finance teams are stretched thin and often do not have the capacity to maximize their budget allocations.

MCESA's financial management team is always ready to provide financial consulting, both working with school employees when navigating financial software and through all stages of budgeting and accounting processes. That includes working collaboratively with school districts in determining local property tax rates, assisting districts in complying with state and federal statutes and regulations, and acting as the fiscal liaison on behalf of school districts with local, county, state, and federal entities. MCESA's team ensures dollars are being used to support children and their learning.

On a weekly basis, MCESA processes about 4,000 warrants (both payroll and payables) and 7,000 direct deposit transactions.

MCESA also provides garnishment services to a majority of the school districts in Maricopa County, handling approximately $13 million in garnishment pay warrants in fiscal year 2014.

Along with overseeing MCESA's own multi-million dollar grants, MCESA's financial services department also oversees grants for 38 Maricopa County school districts, maintaining accurate and up-to-date records of grants in accordance with state and federal laws.

Overall, MCESA's financial services department aims for personalized help so that schools can accurately allocate dollars to operate efficiently in order to most benefit students.

4,000 WARRANTS
(BOTH PAYROLL AND PAYABLES)
MCESA PROCESSES WEEKLY

7,000 DIRECT DEPOSIT
TRANSACTIONS
MCESA PROCESSES WEEKLY

Development Partners: Tyler Technologies

[10] http://247wallst.com/special-report/2015/01/09/americas-best-and-worst-school-systems/5/

SPOTLIGHT ON…

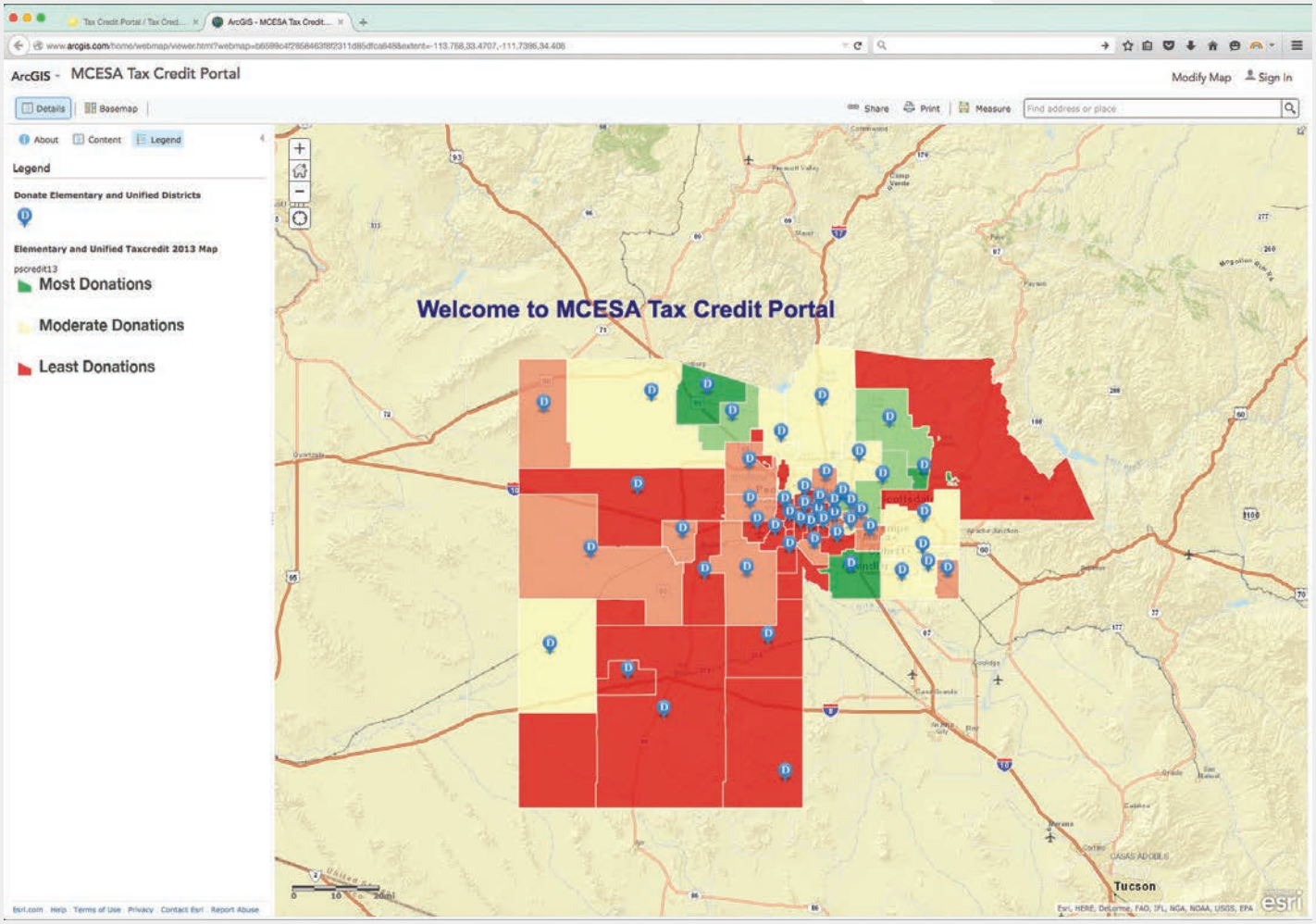
Tax Credit Portal

Ensuring all students have access to high quality extra curricular activities—no matter their geographic location.

Arizona's education tax credit program allows people to donate $200 per person to a school's extracurricular programs. Data showed that 80% of the donations in Maricopa County were being given to the 20% most wealthy school districts.

MCESA created an interactive heat map to inform donors of this inequity and provided a seamless solution to immediately donate.

The city of Phoenix developed a marketing campaign to inform their residents of this portal and within the first six weeks of the program, residents donated $32,000 to county school districts. Ten school districts with some of the lowest contributions the year prior all saw an increase in giving.



MCESA's interactive heat map has helped increase donations to districts in need.

Development Partners: City of Phoenix

MCESA
Maricopa County Education Service Agency

4041 N. Central Ave., Ste. 1200
Phoenix, AZ 85012

education.maricopa.gov